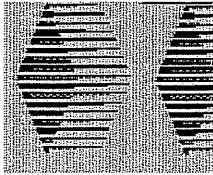


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RADIO FREQUENCY ANALYSIS
PROPOSED PERSONAL COMMUNICATION SYSTEM
BASE STATION
CINGULAR WIRELESS SITE NO. SJ-009-01
"LAKEWOOD PARK"
SILVERLAKE DRIVE AT LAKECHIME DRIVE,
SUNNYVALE, CALIFORNIA

By: Diamond Services
Date 01/18/2006



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Report Summary

Based upon information provided by Cingular Wireless and the design engineer, and using the calculated method for determining RF field strength, it is the engineer's opinion that the PCS base station which will be installed at Silverlake Drive at Lakechime Drive, Sunnyvale, California will comply with the FCC's current prevailing standard for limiting human exposure to RF energy.

Due to the mounting method utilized, the general public would not normally be able to approach the antennas. Therefore, no significant impact on the general population is expected. The calculated electromagnetic field strength level in publicly accessible areas is less than the existing standard allows for exposure of unlimited duration. Additionally, due to the mounting method used, no significant impact on the environment is expected.

For personnel who work near the antennas, a training program in exposure to RF fields is recommended, since any access closer than fifteen feet to the face of a Cingular PCS antenna could expose personnel to RF field levels greater than the occupational limits, and such access should be prohibited. At this site, public access to the face of an antenna is not expected. Maintenance personnel should be instructed to contact Cingular Wireless prior to working in front of an antenna.

RF warning signs should be posted at the base of the light standard.

Background

Diamond Services¹ has been retained by Cingular Wireless to conduct a Radio Frequency (RF) electromagnetic analysis for a Personal Communication System (PCS) base station to be installed at Silverlake Drive at Lakechime Drive, Sunnyvale, California. This analysis consists of a review of the proposed site conditions, calculation of the estimated RF field strength of the PCS base station, and the provision of a comparison of the estimated field strength with the Federal Communication Commission (FCC) recommended guidelines for human exposure to RF electromagnetic fields.

¹ PGI Group Incorporated d.b.a. Diamond Services

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Site Description

Based upon the drawings provided by the design engineer, six proposed Cingular Wireless panel antennas will be mounted on a replacement light standard. The antennas will be mounted approximately 45'-9" (to bottom of lowest antennas) above ground level.

The antennas will be oriented such that the main lobes are oriented toward the horizon. Normal public and occupational access to the front of the antennas is not expected due to the mounting location and method utilized.

RF Field Strength Calculation Methodology

A generally accepted method is used to calculate the expected RF field strength. The method uses the FCC's recommended equation² which predicts field strength on a worst case basis by doubling the predicted field strength. The following equation is used to predict maximum RF field strength:

$$\text{Equation 1} \quad S = \frac{(2)^2 PG}{4\pi R^2} = \frac{PG}{\pi R^2} = \frac{EIRP}{\pi R^2}$$

Where:

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

The ground level effect of the Cingular Wireless 850 Mhz emissions was calculated using a maximum downtilt of 5°, and a maximum ERP of 1000 watts. Results were calculated for a height of 6'-6" above ground level. Using these factors, the maximum calculated 850 Mhz fields at ground level are 2.25% of the existing standard for general population uncontrolled exposure.

The ground level effect of the Cingular Wireless 1900 Mhz emissions was calculated using a maximum downtilt of 5°, and a maximum ERP of 1000 watts. Results were calculated for a height of 6'-6" above ground level. Using these factors, the maximum calculated 1900 Mhz fields at ground level are 1.10% of the existing standard for general population uncontrolled exposure.

² Reference Federal Communication Commission Office of Engineering Technology Bulletin 65

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At ground level, the combined effect of the Cingular Wireless 1900 Mhz and 850 Mhz RF fields is calculated to be a maximum of 3.35% of the applicable limit for general public uncontrolled exposure.

Calculations were performed for the main antenna lobe, the -3dB point, and the first and second lower lobes.

See Table 1 for the FCC's guidelines on Maximum Permissible Exposure (MPE). Note that the RF ranges referenced for this analysis are the ranges of 300 – 1500 Mhz, and 1500 – 100,000 Mhz shown in Table 1, which is included in Appendix A.

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Exposure Environments

The FCC guidelines incorporate two separate tiers of exposure limits that are dependent on the situation in which the exposure takes place and/or the status of the individuals who are subject to exposure. The decision as to which tier applies in a given situation should be based on the application of the following definitions.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public always fall under this category when exposure is not employment-related.

For purposes of applying these definitions, awareness of the potential for RF exposure in a workplace or similar environment can be provided through specific training as part of a RF safety program. Warning signs and labels can also be used to establish such awareness as long as they provide information, in a prominent manner, on risk of potential exposure and instructions on methods to minimize such exposure risk. For example, a sign warning of RF exposure risk and indicating that individuals should not remain in the area for more than a certain period of time could be acceptable.

Another important point to remember concerning the FCC's exposure guidelines is that they constitute ***exposure*** limits (not ***emission*** limits), and they are relevant only to locations that are ***accessible*** to workers or members of the public. Such access can be restricted or controlled by appropriate means such as the use of fences, warning signs, etc., as noted above. For the case of occupational/controlled exposure, procedures can be instituted for working in the vicinity of RF sources that will prevent exposures in excess of the guidelines. An example of such procedures would be restricting the time an individual could be near an RF source or requiring that work on or near such sources be performed while the transmitter is turned off or while power is appropriately reduced.

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Qualifications of Reporting Engineer

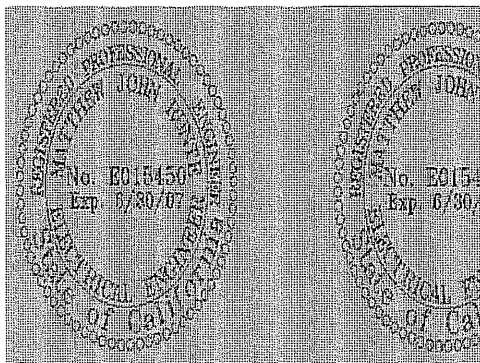
Mr. Runte has been involved in the measurement of RF emissions since 1979. He has designed numerous RF systems including both site design and RF system design. He is a registered Professional Engineer in the state of California, and all contents of this report are true and correct to the best of his knowledge.



Signed:

Matthew J. Runte, P.E.

Date: 01/18/2006



Professional Engineer Stamp

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APPENDIX A

Term Definitions

Exposure Exposure occurs whenever and wherever a person is subjected to electric, magnetic or electromagnetic fields other than those originating from physiological processes in the body and other natural phenomena.

Exposure, partial-body. Partial-body exposure results when RF fields are substantially nonuniform over the body. Fields that are nonuniform over volumes comparable to the human body may occur due to highly directional sources, standing-waves, re-radiating sources or in the near field.

General population/uncontrolled exposure. For FCC purposes, applies to human exposure to RF fields when the general public is exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public always fall under this category when exposure is not employment-related.

Maximum permissible exposure (MPE). The rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with an acceptable safety factor.

Occupational/controlled exposure. For FCC purposes, applies to human exposure to RF fields when persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see definition above), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

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Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

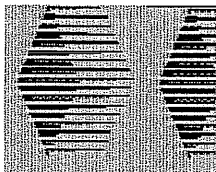
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

NOTE 1: **Occupational/controlled** limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2: **General population/uncontrolled** exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.



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ATTACHMENT H

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January 10, 2006

Mr. Luke Stamos
C/O Cingular Wireless
4420 Rosewood Drive
Bldg. 2, Third Floor
Pleasanton, CA 94588

Re: Ambient Noise Level: SJ-009-01
Silverlake Drive at Lakechime Drive,
Sunnyvale, California
Zoning Drawings dated 09/28/2005

Mr. Stamos,

The Cingular electronic equipment at this site will be installed inside a building. Each equipment rack has a small cooling fan, and no air conditioning units or exhaust fans are depicted on the drawings.

Therefore, the Cingular equipment is not expected to contribute to exterior (to the building) noise levels.

Please call if you have any questions.

Sincerely,

Matthew Runte, PE
Diamond Services
(925) 286-8761